ABSTRACT:

SIGNAL ESTIMATION METHODS AND APPARATUS

Methods and apparatus for estimating likelihood values for signals of a sequence of signals transmitted from a transmitter through a channel to a receiver are described. The methods employ a plurality of particles, each particle comprising a postulated transmitted signal history. An embodiment of the method comprises initialising a set of said particles; evolving said set of particles over time to generate a succession of evolved sets of particles; tracing a plurality of paths through said succession of evolved sets of particles backwards in time; and determining a sequence of likelihood values for said transmitted sequence of signals using said paths. The invention is particularly useful for communications systems in which a receiver receives signals from a transmitter with a plurality of transmit antennas, such as MIMO (Multiple-Input Multiple-Output) systems.

Figure 7.